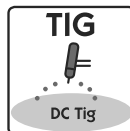
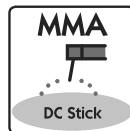


# **MIG/MMA/TIG**

## **165/190/220/250 Inverter Manual**



# 2 YEARS *Warranty\**

## Machine Model

### Description

MIG/MM/TIG Inverter

### Part Number

KUMJR165 / 190 / 220 / 250

## CONTENTS

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## Machine Model

This welding equipment for industrial and professional use conforms to IEC 60974 International Safety Standard.

We hereby state that we provide one year of guarantee for this welding Power Source from the date of purchase.

Refer to Unimig for further details.

Please read and understand this instruction manual carefully before the installation and operation of this equipment.

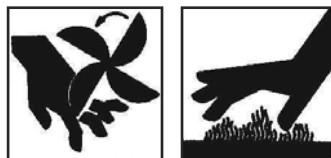
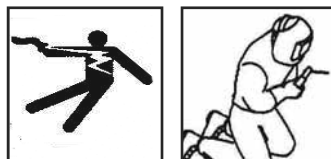
The contents of this manual may be revised without prior notice and without obligation.

This instruction manual is issued on 1st April 2008.

## SAFETY

Welding and cutting equipment can be dangerous to both the operator and people in or near the surrounding working area, if the equipment is not correctly operated. Equipment must only be used under the strict and comprehensive observance of all relevant safety regulations. Please read and understand this instruction manual carefully before the installation and use/operation of this equipment.

- Do not switch the function modes while the machine is operating.  
Switching of the function modes during welding can damage the machine.  
Damage caused in this manner will not be covered under warranty.
- Disconnect the electrode-holder cable from the machine before switching on the machine, to avoid arcing should the electrode be in contact with the work piece.
- A safety switch is necessary to prevent the equipment from electric leakage.
- Welding tools and accessories should be of high quality and in good working order.
- Operators should be trained and or qualified. Electric shock: It can kill.
- Connect the primary input cable according to Australian standard regulation.
- Avoid all contact with live electrical parts of the welding circuit, electrodes and wires with bare hands. The operator must wear dry welding gloves while he/she performs the welding task.
- The operator should keep the work piece insulated from himself/herself. Smoke and gas generated whilst welding or cutting can be harmful to people's health.
- Avoid breathing the smoke and gas generated whilst welding or cutting. Keep the working area well ventilated.
- Arc rays are harmful to people's eyes and skin. Always wear a welding helmet and suitable protective clothing including welding gloves whilst the welding operation is performed.
- Measures should be taken to protect people in or near the surrounding working area, from all hazards associated with welding.

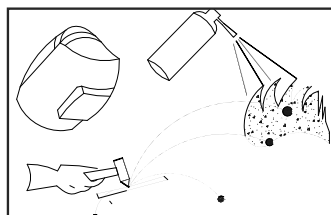
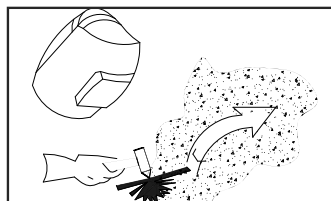


### Fire hazard

- The welding sparks may cause fire, therefore remove flammable material away from the working area.
  - Have a fire extinguisher nearby, and have a trained person ready to use it.
- Noise:** possibly harmful to people's hearing.
- Noise is generated while welding/cutting, wear approved hearing protection when noise levels are high.

### Machine fault:

- Consult this instruction manual.
- Contact your local dealer or supplier for further advice.



### \*\*\* CAUTION \*\*\*

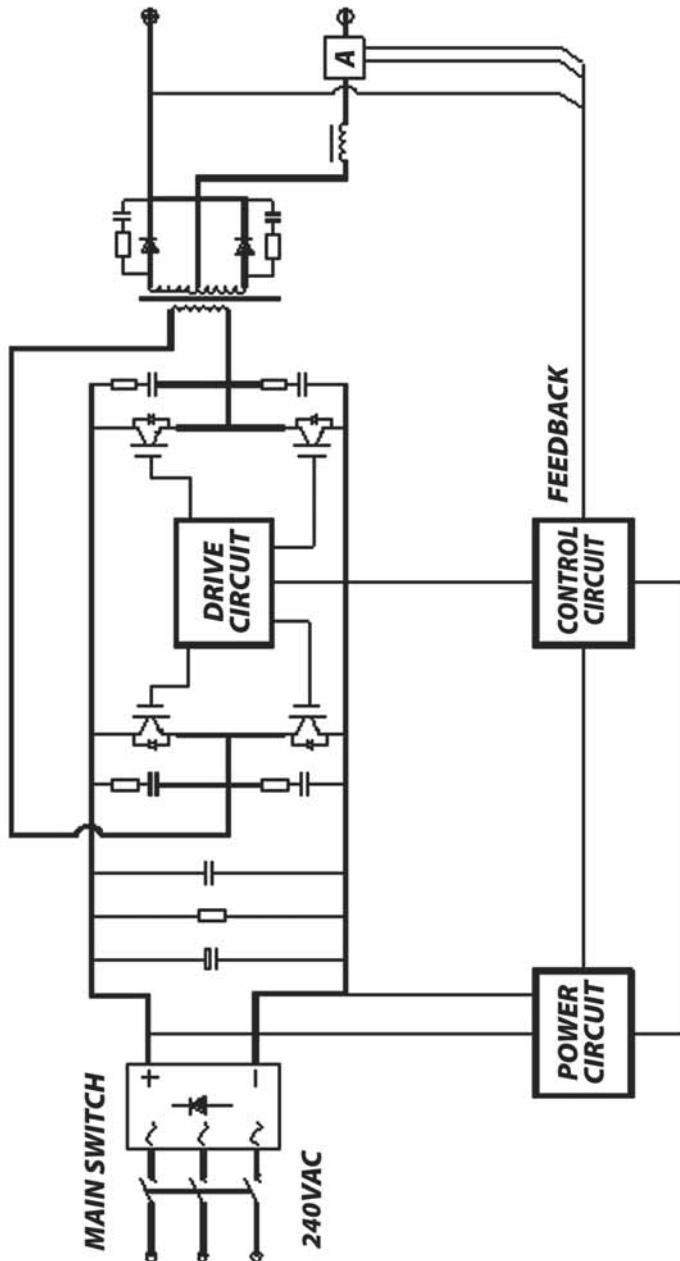
**Do not heat, cut or weld tanks, drums or containers until the proper steps have been taken to insure that such procedures will not cause flammable or toxic vapours from substance inside. These can cause an explosion even though the vessel has been "cleaned". Vent hollow castings or containers before heating, cutting or welding. They may explode.**



## MACHINE FEATURES

- Latest IGBT inverter technology
- MIG/MAG with gasless wire function
- MMA (Stick electrode) (DC+ / DC-) function
- Industrial application
- High strength metal case construction
- Internal gear drive wire feeder for 5Kg & 15kg spool
- Euro style MIG torch connection
- IP21S rating for environmental / safety protection
- Stepless voltage and wire feed control
- Scratch start DC TIG welding
- Excellent arc stability for MIG / MMA / TIG welding
- Light weight and portable
- Wire inch and burn back functions

## CIRCUIT DIAGRAM





## MAIN PARAMETER 220/250

Machine Model			
Description	Part Number		
MIG/MMA/TIG Inverter	KUMJR220	KUMJR250	
Technical Specification			
PRIMARY INPUT VOLTAGE	240V 1 Phase	240V 1 Phase	
WELDING CURRENT MIG	30-220 Amps	30-250 Amps	
WELDING CURRENT MMA	10-200 Amps	10-250 Amps	
DUTY CYCLE 40°C			
MIG WELDING	40% @ 220A / 100% @ 139A	35% @ 250A / 100% @ 148A	
MMA WELDING	40% @ 200A / 100% @ 125A	35% @ 224A / 100% @ 137A	
WELDING VOLTAGE RANGE DC	0.6 – 1.2mm Ferrous	0.6 – 1.2mm Ferrous	15.5-25 Volts 15.5-26.5 Volts
WIRE SIZE (mm)	0.9 – 1.2mm Aluminium	0.9 – 1.2mm Aluminium	
	0.8 – 1.0mm Stainless Steel	0.8 – 1.0mm Stainless Steel	
	0.9 – 1.2mm Flux cored	0.9 – 1.2mm Flux cored	
DIMENSIONS (mm)	580 x 230 x 450mm	580 x 230 x 450mm	
WEIGHT (Kgs)	23 Kgs	24 Kgs	

## INSTALLATION & OPERATION

**Note:** ·Please install the machine strictly according to the following steps.  
·The protection class of this machine is IP21S, so avoid using it in rain.

### 1. Connection of Input Cables

Primary input cable is supplied with this welding equipment. Connect the primary input cable with power supply of required input voltage. Refer to data plate on machine for Input voltage, Maximum Input Current (IMAX) and Effective input Current (IEFF).

### Installation of MMA welding

1. Turn the power source on and select stick function through Stick/MIG selector (See Panel Structure Diagram Number 7)

2. Set the welding current in relation to the electrode to be welded.  
(See Panel Structure Diagram Number 4)

Generally, the required welding current is listed as follows:

**Φ2.5mm: 70-100A;   Φ3.2mm: 110-160A;   Φ4.0mm: 170-220A;**

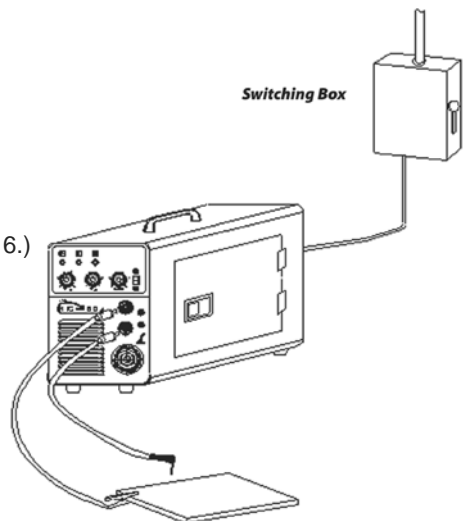
### 3. Connection of Output Cables

Two sockets are available on this welding machine. For MMA welding the electrode holder should generally be connected to the positive socket, while the work piece should be connected to the negative socket. However the polarity can be reversed and careful attention should be paid to the polarity recommended by the electrode manufacturer. (See Panel Structure Diagram Number 8&9.)

### Installation sketch map

**WARNING!**  

Disconnect the fast plug on the wire feeder from the output socket's "GAS" "NO-GAS" on the clapboard.  
(See Panel Structure Diagram Number 15&16.)  
If cable is not disconnected welding voltage is present at the MIG torch and can cause arcing or flash.







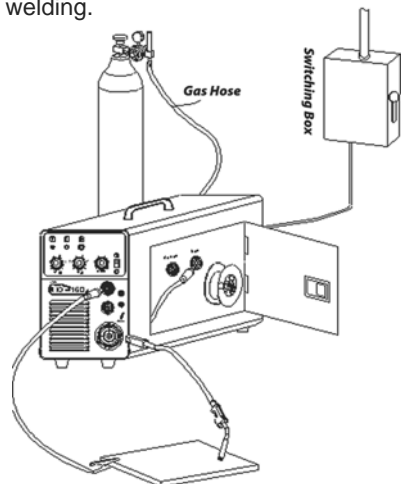
## INSTALLATION & OPERATION

### Installation of gas shielded arc welding

- (1) Turn the power source on and select the MIG function through the STICK/MIG selector. (See Panel Structure Diagram Number 7)
- (2) Plug the welding torch into the output socket "10" on the front panel, (See Panel Structure Diagram Number 10) and tighten it.
- (3) Insert the earth cable plug into the negative socket "8" on the Panel Structure Diagram, and tighten it clockwise.
- (4) Insert the fast plug on the wire feeder into the output socket "GAS" on the clapboard, and tighten it clockwise. (See Clapboard Structure Diagram Number 15)
- (5) Remove the right side cover of the unit and push the wire spool onto the spindle. Make free the end of the wire and cut it smoothly. Unlock the pressure arm and align the wire into the groove of the drive roll putting a short part of the wire into the torch receptacle. Check that the drive roll and contact tip in MIG torch being used complies with the wire diameter, replace if necessary. Lock the pressure arm and check that the bearing roll presses the wire exactly into the groove.
- (6) Press selector switch on for "wire inching" (See Panel Structure Diagram Number 3) Press and hold until wire is visible at end of torch.
- (7) Tightly connect the gas hose, which comes from the back of the machine to the brass nipple of supplied regulator, adjust argon regulator to deliver the required litres per minute.  
NOTE. refer to instruction manual of argon regulator for proper use.
- (8) Adjust the welding voltage adjustment knob and wire feeding speed adjustment knob according to practical needs to get the desired welding voltage and welding current. (See Panel Structure Diagram Number 5&6)
- (9) Press the welding torch switch, and welding can be carried out.
- (10) Adjust the burnback time potentiometer on the clapboard to get the desired length of welding wire stretching into the contact tip after welding.  
(See Clapboard Structure Diagram Number 14)

### Installation sketch map

**WARNING!**    
Disconnect the Electrode Holder cable from the machine before using MIG function. If cable is not disconnected welding voltage is present and can cause arcing or flash.



## INSTALLATION & OPERATION

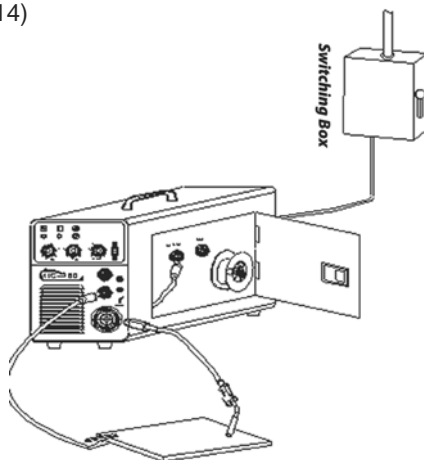
### Installation of self shielded arc welding (No Gas)

- (1) Turn the power source on and select the MIG function through the STICK/MIG selector. (See Panel Structure Diagram Number 7)
  - (2) Plug the welding torch into the output socket "10" on the front panel, (See Panel Structure Diagram Number 10) and tighten it.
  - (3) Insert the earth cable plug into the positive socket "9" on the Panel Structure Diagram, and tighten it clockwise.
  - (4) Insert the fast plug on the wire feeder into the output socket "NO GAS" on the clapboard, and tighten it clockwise. (See Clapboard Structure Diagram Number 16)
  - (5) Remove the right side cover of the unit and push the wire spool onto the spindle. Make free the end of the wire and cut it smoothly. Unlock the pressure arm and align the wire into the groove of the drive roll putting a short part of the wire into the torch receptacle. Check that the drive roll and contact tip being used complies with the wire diameter, replace if necessary. Lock the pressure arm and check that the bearing roll presses the wire exactly into the groove.
  - (5a) Please note that a knurled drive roller should be fitted when using self shielded wire.
  - (6) Press selector switch on for "wire inching" (See Panel Structure Diagram Number 3) Press and hold until wire is visible at end of torch.
  - (7) Adjust the welding voltage adjustment knob and wire feeding speed adjustment knob according to practical needs to get the desired welding voltage and welding current. (See Panel Structure Diagram Number 5&6)
  - (8) Press the welding torch switch, and welding can be carried out.
  - (9) Adjust the burnback time potentiometer on the clapboard to get the desired length of welding wire stretching into the contact tip after welding.
- (See Clapboard Structure Diagram Number 14)

### Installation sketch map



Disconnect the Electrode Holder cable from the machine before using MIG function. If cable is not disconnected welding voltage is present and can cause arcing or flash.



## CAUTION

### 1. Working Environment.

- 1.1 The environment in which this welding equipment is installed must be free of grinding dust, corrosive chemicals, flammable gas or materials etc, and at no more than maximum of 80% humidity.
- 1.2 When using the machine outdoors protect the machine from direct sun light, rain water and snow etc; the temperature of working environment should be maintained within -10°C to +40°C.
- 1.3 Keep this equipment 30cm distant from the wall for ventilation.
- 1.4 Ensure the working environment is well ventilated.

### 2. Safety Tips.

#### 2.1 Ventilation

This equipment is small-sized, compact in structure, and of excellent performance in amperage output. The fan is used to dissipate heat generated by this equipment during the welding operation.

#### Important:

Maintain good ventilation of the louvers of this equipment. The minimum distance between this equipment and any other objects in or near the working area should be 30 cm. Good ventilation is of critical importance for the normal performance and service life of this equipment.

### 2.2 Thermal Overload protection.

Should the machine be used to an excessive level, or in high temperature environment, poorly ventilated area or if the fan malfunctions the Thermal Over load Switch will be activated and the machine will cease to operate. Under this circumstance, leave the machine switched on to keep the built-in fan working to bring down the temperature inside the equipment. The machine will be ready for use again when the internal temperature reaches safe level.

### 2.3 Over-Voltage Supply

Regarding the power supply voltage range of the machine, please refer to "Main parameter" table. This equipment is of automatic voltage compensation, which enables the maintaining of the voltage range within the given range. In case that the voltage of input power supply amperage exceeds the stipulated value, it is possible to cause damage to the components of this equipment. Please ensure your primary power supply is correct.

- 2.4 Do not come into contact with the output terminals while the machine is in operation. An electric shock may possibly occur.

## MAINTENANCE

### **WARNING:**

**Exposure to extremely dusty, damp, or corrosive air is damaging to the welding machine. In order to prevent any possible failure or fault of this welding equipment, clean the dust at regular intervals with clean and dry compressed air of required pressure.**

**Please note that: lack of maintenance can result in the cancellation of the guarantee; the guarantee of this welding equipment will be void if the machine has been modified, attempt to take apart the machine or open the factory-made sealing of the machine without the consent of an authorized representative of the manufacturer.**

## 10. TROUBLESHOOTING

### **Caution:**

**Only qualified technicians are authorized to undertake the repair of this welding equipment. For your safety and to avoid Electrical Shock, please observe all safety notes and precautions detailed in this manual.**

## MACHINE OPTIONS



**TROLLEY OPTION MIG 165 / 190**

**PART NO: UMJRTROLLEY2**

**TIG TORCH OPTION  
PART NO: 17V-4MCP25**



**TROLLEY OPTION MIG 220 / 250**

**PART NO: UMJRTROLLEY**

**TIG TORCH OPTION  
PART NO: 26V-4MCP50**



## WARRANTY

- 2 Years from date of purchase.

• Welding Guns of Australia Pty Ltd warranties all goods as specified by the manufacturer of those goods. This Warranty does not cover freight or goods that have been interfered with. All goods in question must be repaired by an authorised repair agent as appointed by this company. Warranty does not cover abuse, mis-use, accident, theft, general wear and tear. New product will not be supplied until

Welding Guns of Australia Pty Ltd has inspected product returned for warranty and agree's to replace product. Product will only be replaced if repair is impossible.  
If in doubt please ring.



**UNI-MIG**  
**WELDING**   
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For further information please call Welding Guns of Australia Pty Ltd.

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UNIMIG pursue a policy of continuous research and development, and therefore reserve the right to change the specifications, or design, without prior notice. • 2 year warranty power source.